

WHAT IS CLAIMED IS:

1. A method of self-aligning connections for a two section mast, which method comprises:

transporting an elongated bottom mast section to a guide frame adjacent to a well site, said bottom mast section having a pair of front legs and a pair of rear legs;

transporting an elongated top mast section to said well site so that said mast sections are aligned, said top mast section having a pair of front legs and a pair of rear legs;

positioning said legs of said bottom mast section slightly below a level of said legs of said top mast section; and

raising said bottom mast section in order to engage said top mast section while simultaneously aligning the mast sections together.

2. A method of self-aligning connections as set forth in Claim 1 wherein said bottom connection is raised by cylinders on mast stands.

3. A method of self-aligning connections as set forth in Claim 2 wherein said cylinders are powered by a rig hydraulic system.

4. A method of self-aligning connections as set forth in Claim 1 wherein said legs of bottom mast section are positioned slightly below a level of said legs of said top mast section covering said bottom mast section before said raising step.

1 5. A method of self-aligning connections as set forth in Claim 1 including the additional
2 step of pinning said top mast section to said bottom mast section.

1 6. A method of self-aligning connections as set forth in Claim 1 wherein said bottom
2 mast section and said top mast section are each transported on a vehicle in a horizontal orientation
3 prior to a vertical use orientation.

1 7. A method of self-aligning connections as set forth in Claim 1 wherein said legs of said
2 bottom mast section are positioned by cylinders on said mast stands.

1 8. A method of self-aligning connections as set forth in Claim 1 wherein said pair of top
2 mast front legs each include a pair of protruding circular plates which engage and align with said pair
3 of bottom mast front legs which each include an alignment jaw with a pair of hooks.

1 9. A method of self-aligning connections as set forth in Claim 1 wherein said pair of top
2 mast rear legs each include a jaw with a shoulder which engage and align with said pair of bottom
3 mast rear legs which each include a jaw with protruding semi-circular plates.

1 10. A method of self-aligning connections as set forth in Claim 9 wherein each said
2 shoulder includes a radial face to receive said circular plates.

1 11. A method of self-aligning connections as set forth in Claim 1 wherein said steps are
2 performed in reverse order to disassemble said two section mast.

1 12. A two section mast with self-aligning connections, which mast comprises:
2 an elongated bottom mast section having a pair of front legs and a pair of rear legs;
3 an elongated top mast section having a pair of front legs and a pair of rear legs;
4 a self-aligning connection between said mast sections wherein said pair of top mast
5 front legs each include a pair of protruding circular plates, each said pair of plates engage and align
6 with a jaw with a pair of hooks extending from each said bottom mast front leg and wherein said pair
7 of top mast rear legs each include a jaw with a shoulder, each said jaw engaging and aligning with
8 a jaw with protruding semi-circular plates extending from each bottom mast rear leg.

1 13. A two section mast as set forth in Claim 12 including mast stands having at least one
2 hydraulic cylinder to move said bottom mast.

1 14. A two section mast as set forth in Claim 12 including a pin passing through each said
2 jaw of said bottom mast front legs and through each said pair of protruding circular plates of said
3 top mast front legs.

1 15. A two section mast as set forth in Claim 12 including a pin passing through each said
2 jaw with a shoulder of said top mast rear legs and through each said jaw with protruding semi-
3 circular plates of said bottom mast rear legs.